

I claim:

1. De-feathering apparatus comprising:

5 a plurality of elongating picking elements comprising structures selected from the group consisting of: filaments, fibers, bristles, wires, and substantially rigid threads.

2. De-feathering apparatus according to claim 1 wherein said picking elements having a length to diameter ratio of at least approximately 10:1.

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3. De-feathering apparatus according to claim 2 wherein said picking elements have diameters selected from between 10 and 240 mils.

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4. De-feathering apparatus according to claim 3 wherein said picking elements are comprised of a crystalline resin polymer base material.

5. De-feathering apparatus according to claim 4 wherein said picking elements are comprised of a nylon base material.

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6. De-feathering apparatus according to claim 1 or 5 wherein said picking elements have first and second ends, and wherein said first ends are affixed to at least a first rotatable unit.

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7. De-feathering apparatus according to claim 6 wherein said rotatable unit is connected to a motor driven system for causing rotation of said rotatable unit.

8. De-feathering apparatus according to claim 7 wherein said rotatable unit is functionally installed on a motorized picking apparatus comprising:

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a first bank of rotatable units having a plurality of said picking elements affixed thereon;

5 a second bank of rotatable units having a plurality of said picking elements affixed thereon, said second bank of rotatable units located spaced apart from and substantially opposite said first bank of rotatable units such that said first and said second banks of rotatable units define a space therebetween for passage of a line of poultry therethrough.

9. De-feathering apparatus according to claim 8 wherein oppositely facing rotatable units rotate in opposite directions one from the other.

10 10. De-feathering apparatus according to claim 9 wherein adjacently located rotatable units rotate in opposite directions one from the other.

11. De-feathering apparatus according to claim 10 wherein said first and said second banks of rotatable units each include at least two rows and at least four columns of 15 rotatable units.

12. De-feathering apparatus according to claim 10 wherein each rotatable unit in said first and second banks of rotatable units is connected to a motor driven system for causing rotation of said rotatable unit at a rate selected from between 200 and 2000 20 revolutions per minute.

13. De-feathering apparatus according to claim 12 wherein each said rotatable unit of said first and said second banks of rotatable units is adjustable in orientation thereby to provide tailorability of said motorized picking apparatus for de-feathering multiple sizes 25 of poultry.

14. De-feathering apparatus according to claim 13 wherein said space between said first and said second banks of rotatable units is adjustable in size.

15. De-feathering apparatus according to claim 14 further including a fluid line having at least one fluid jet for providing a water spray source to said first and said second banks of rotatable units.
- 5 16. De-feathering apparatus according to claim 6 wherein said picking elements are affixed to said rotatable unit in closely packed clusters.
- 10 17. De-feathering apparatus according to claim 16 wherein said rotatable unit comprises a rotatable disk and includes a plurality of picking element clusters spaced apart one from another, each said picking element cluster comprising approximately 50-150 picking elements.
18. De-feathering apparatus according to claim 17 wherein said plurality of picking element clusters extend substantially perpendicularly from a face of said rotatable disk.
- 15 19. De-feathering apparatus according to claim 17 wherein said plurality of picking element clusters extend at angles selected from between 45-90 degrees from a face of said rotatable disk.
- 20 20. De-feathering apparatus according to claim 1 wherein said picking elements are crimped along a substantial portion of their length.
21. De-feathering apparatus according to claim 1 wherein said picking elements are serrated along a substantial portion of their length.
- 25 22. De-feathering apparatus according to claim 1 wherein said picking elements are crimped along a substantial portion of their length.
23. De-feathering apparatus according to claim 1 wherein said picking elements are 30 corkscrewed along a substantial portion of their length.

24. De-feathering apparatus according to claim 1 wherein said picking elements are tapered along a substantial portion of their length.
25. De-feathering apparatus according to claim 1 wherein said picking elements have substantially rounded tips.
26. A method of de-feathering poultry comprising:
 - rotating a plurality of elongated picking elements about an axis; and
 - causing a poultry carcass to contact said rotating plurality of elongated picking elements;said elongated picking elements comprising structures selected from the group consisting of: filaments, fibers, bristles, wires, and substantially rigid threads.
27. A method of de-feathering poultry according to claim 26 wherein said picking elements having a length to diameter ratio of at least approximately 10:1.
28. A method of de-feathering poultry according to claim 27 wherein said picking elements have diameters selected from between 10 and 240 mils.
29. A method of de-feathering poultry according to claim 28 wherein said picking elements are comprised of a crystalline resin polymer base material.
30. A method of de-feathering poultry according to claim 29 wherein said picking elements are comprised of a nylon base material.
31. A method of de-feathering poultry according to claim 26 further including passing a poultry carcass between opposing banks of rotating units having picking elements extending therefrom.
32. A method of de-feathering poultry according to claim 31 further including causing oppositely facing rotating units to counter rotate one with respect to the other.

33. De-feathering apparatus comprising:

a plurality of elongating picking elements comprising structures selected from the group consisting of: filaments, fibers, bristles, wires, and substantially rigid threads;

5 said plurality of elongated picking elements being connected to and extending longitudinally from a plug unit; and

a rotatable disk having at least one aperture, said plug unit being selectively connectable to said rotatable disk via said aperture.

10 34. De-feathering apparatus according to claim 33 wherein said picking elements are comprised of a crystalline resin polymer base material.

35. De-feathering apparatus according to claim 34 wherein said picking elements are comprised of a nylon base material.

15 36. De-feathering apparatus according to claim 35 wherein said picking elements are at least substantially flexible and possess at least a partial memory quality for returning said elements to a substantially original configuration after deflection.

20 37. De-feathering apparatus according to claim 6 wherein said picking elements are at least substantially flexible and possess at least a partial memory quality for returning said elements to a substantially original configuration after deflection.

25 38. De-feathering apparatus according to claim 8 wherein said first and second banks of rotatable units are configured in orientations selected from the group consisting of: horizontal, vertical, and angular.